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EXAMINER	
LUHRS, MICHAEL K	

ART UNIT	PAPER NUMBER
2824	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/632,598	SHEPHERD ET AL.	
	Examiner	Art Unit	
	Michael K. Luhrs	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *27-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,9-20,23,24 and 26* is/are rejected.

7)☒ Claim(s) *5-8,21,22 and 25* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 August 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *23 February 2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *search history*.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-26, drawn to method, classified in class 264, subclass 10.

II. Claims 27-32, drawn to device, classified in class 315, subclass 169.3.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to make other and materially different product other than the EL device.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Attorney James Parker on 10/19/04 a provisional election was made without traverse to prosecute the invention of Group I method, claims 1-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 27-32 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

5. The drawings are objected to because:

a. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

b. The drawings are objected to because there are no reference numbers in Figures 1, 3, and 8. The suggested change is to replace the text with numeral designations as the respective elements are labeled in the specification.

c. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. The disclosure is objected to because of the following informalities:

a. There are no references numbers in the specification for Figures 1, 3, and 8.

b. The specification lacks a detailed discussion of Figures 3 and 4: specifically, in the specification, introduce reference numbers for: silicon, (line 11, p. 3), high voltage (line 11, p. 3), spark plasma, (line 12, p. 3), and particles and/or heavy ion salt (lines 13-14, p. 3) in accordance with the claimed elements within method claims 1 and 20. And include these reference numbers in Fig. 3 accordingly. The volatile liquid (line 13, p.3) critical to claim 1, line 5 and, claim 20, line 5, as well as, the means of introducing (claim 1, line 5 and, claim 20, line 5) by metal needle as an anode (as in the specific embodiment, lines 9-10, p. 6), require reference numbers in the specification and include in Fig. 3, as well.

c. Fig. 1 (Prior Art) also lacks numerical designations in the specification and Figure.

d. P. 3, line 11, insert commas after "involves" and after "silicon".

Appropriate correction is required.

Information Disclosure Statement

7. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. (Numerous references on pp. 1, 2, 7, 8 and 9 in the specification).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1, 3, 4, 9-10, and 12-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okabe et. al. USPN 6,280,799.

Regarding claim 1, while Okabe et. al. are silent with respect to spark, Okabe et. al. teach, voltage applied to electrode 14 (lines 34-36, column 4), a medium 16, as a counter electrode (line 59, column 4), AC or DC voltage (line 18, column 5), the applied range for AC is 100V to 20 kV (lines 52-52, column 5), and a frequency of discharge of 1Hz to 1,000kHz (lines 66-67, column 5), all amount to a spark processing, since a discharge passes between the electrode and the medium 16 (lines 27-28, column 11), is therefore *a method for spark-processing silicon comprising: applying to silicon sparks of sufficiently high voltage to effect the production of spark-processed silicon, wherein applying to the silicon sparks of sufficiently high voltage to effect the production of spark-processed silicon creates a spark plasma;* when the substance contains at least glass powder (lines 47-48, column 3) i.e. glass consists of silicon having particle size (lines 53-54, column 2). Further, Okabe et. al. teach, *introducing into the spark plasma a volatile liquid in which particles are suspended,* as the principle component as a liquid expressed in lines 63-64, column 7, includes organic liquids listed in column 8 beginning line 16, are as known liquids (line 16, column 8), and are volatile, e.g. alcohols listed, are added, wherein an (objective substance) line 65, column 7, is dispersed, is therefore a volatile liquid having (dispersed) particles suspended therein, (See the 'suspension' in line 27, column 7).

Regarding claim 3, Okabe et. al. teach, *the method according to claim 1, wherein Si particles are suspended in the volatile liquid*, since glass powder, i.e. particles of glass, (lines 47-48, column 3) glass consists of silicon, when it is used in the objective substance of line 65, column 7.

Regarding claim 4, Okabe et. al. teach, *the method according to claim 3, wherein Si particles having a size,* as range 0.1 to 10 um (lines 58-59, column 2), but is silent regarding *the range of about 0.2 um to about 20 um,* yet the particles are taught as being *suspended in the volatile liquid*, and as suspended into the principle liquid as the objective substance, previously discussed above. This range, albeit slightly narrower than the applicant's range, is certainly prima facie for sufficient specificity of the particle size.

Regarding claim 9, Okabe et. al. teach, *the method according to claim 1, wherein the volatile liquid comprises methanol,* as methanol is listed in line 16, column 8.

Regarding claim 10, Okabe et. al. teach, *the method according to claim 1, wherein the volatile liquid comprises ethanol, s*ince Okabe et. al. teach organic liquids wherein possible organic liquids are alcohols, in line 16, column 8, ethanol being an alcohol, is considered amongst those alcohols as taught, in general, for the liquid in principle component of line 64, column 7.

Regarding claim 12, Okabe et. al. teach, *the method according to claim 1, wherein introducing into the spark plasma a volatile liquid in which particles are suspended creates an aerosol of the volatile liquid in which particles are suspended*, since there is a space between the medium 16 and the nozzle 63 as shown in Fig. 1 in which the volatile liquid (having particle suspended) *traverses*, in thus the locale of the aerosol.

Regarding claim 13, Okabe et. al. teach, *the method according to claim 1, wherein applying to the silicon sparks comprises applying a voltage between an electrode and the silicon,* since in the instance of the nozzle 13 as electrode (line 1, column 10) and the medium such as glass (i.e. glass consists of Silicon) with a voltage.

Regarding claim 14, Okabe et. al. teach, *the method according to claim 13, wherein introducing into the spark plasma a volatile liquid in which particles are suspended comprises introducing into the spark plasma a volatile liquid in which particles are suspended via a means for introducing into the spark plasma a volatile liquid in which particles are suspended which is in electrical contact with the electrode,* since the means of introduction is, i.e. the substance dispenser in Fig. 5, showing the syringe 12, lines 23-25, column 12, having the volatile liquid (the principle liquid discussed previously), having particles suspended therein, numeral 11, Fig. 5, is in electrical contact as passed through nozzle 13 as an electrode (line 1-2, column 10) when the electrode is disposed directly inside the nozzle, see item (3), line 5, column 10, therefore, *via a means for introducing into the spark plasma a volatile liquid in which particles are suspended which is in electrical contact with the electrode.*

Regarding claim 15, Okabe et. al. teach, *the method according to claim 13, wherein introducing into the spark plasma a volatile liquid in which particles are suspended comprises introducing into the spark plasma a volatile liquid in which particles are suspended via a means for introducing into the spark plasma a volatile liquid in which particles are suspended which is electrically isolated from the electrode,* since Okabe et. al. also teach the electrode is exterior the nozzle, see e.g. item 20 (of line 3, column 10), would have isolation having the nozzle material therebetween, certainly when the orifice is insulating (line 35, column 11) and when the

electrode is outside the nozzle and orifice (item (4) line 7, column 10), and when the electrode is apart, as far as 10 cm. (lines 17-18, column 10), is indicative of electrical isolation from the liquid.

Regarding claim 16, Okabe et. al. teach, *the method according to claim 13, wherein a tip of the electrode is separated from the silicon by a distance between about 0.5 mm and about 10mm,* since, range of 0.1 to about 10mm is taught in lines 62-64 column 4, albeit not exactly applicant's range, is certainly prima facie for sufficient specificity of the separation, when the medium 14, is a semiconductor device line 10, column 7 to which the discharge is provided.

Regarding claim 17, Okabe et. al. teach, *the method according to claim 13, wherein a tip of the electrode is separated from the silicon by a distance between about 3mm and about 4mm,* since Okabe et. al. teach the claimed range of 0.1 to about 10mm in lines 62-64 column 4 discussed for claim 16 above, herein, clearly inclusive of applicant's range.

Regarding claim 18, Okabe et. al. teach, *the method according to claim 14, wherein the means for introducing into the spark plasma a volatile liquid in which particles are suspended comprises a metal needle, wherein the metal needle acts as the electrode*, since syringe 12, of Fig. 1, *is* a metal needle, having the extended orifice and nozzle as it is formed of metal (lines 20 and 42, column 4) is of metal as an electrode embedded therein see item (5) line 9, column 10, where the syringe acts as the electrode.

Regarding claim 19, Okabe et. al. teach, *the method according to claim 18, wherein the tip of the needle is modified such that an aerosol of the volatile liquid in which particles are suspended is introduced into the spark plasma,* having the modified hole as a slit (line 54,

column 11) and pressure is applied to the liquid having the particles can be adjusted (lines 42-43, column 6).

10. Claims 2, 20, 23-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okabe et. al. (for claim 2 as applied to claim 1 above), in view of St. John et. al. "Formation of europium oxide structures on crystalline silicon by spark processing" Proceedings of the Intnl Sym. On Advanced Luminescent Materials Chicago, IL, Electrochemical Society Proceedings 92-25, pp. 423-431.

Regarding claim 2, *the method according to claim 1, wherein introducing into the spark plasma a volatile liquid in which particles are suspended during the production of the spark-processed silicon enhances the electroluminescence of the spark-processed silicon,* Okabe et. al. teach electroluminescence display panels (in lines 40-46, column 3), Okabe et. al. teach substances deposited for the display panels in column 9, lines 13-23 using spark processing. Okabe et. al. is only silent with regard to *enhanced electroluminescence.* St. John et. al. teach the *enhanced luminescence* (lines 13-15, "Abstract" and line 4, "Introduction"). Since Okabe et. al. are St. John et. al. are all interested in making the electroluminescence device, the purpose disclosed by St. John et. al. would have been recognized in the pertinent art of Okabe et. al.. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to enhance the electroluminescence device being produced, as taught by St. John, with the appealing enhanced luminescence bands on the substrate of single crystal silicon (lines 9-10, "Abstract").

Regarding claim 20, Okabe et. al. teach *a method for spark-processing silicon, comprising: applying to the silicon sparks of sufficiently high voltage to effect the production of*

spark-processed silicon, wherein applying to the silicon sparks of sufficiently high voltage to effect the production of spark-processed silicon creates a spark plasma ; as discussed for claim 1 above, while Okabe et. al. are silent on the *introduction into the spark plasma a volatile liquid in which a salt of a heavy ion is dissolved.* This latter limitation is taught by St. John et. al., as solution deposition of the Eu3+ salt on the semiconductor surface and spark processing "Abstract" lines 7-9 that results in narrow luminescence which is appealing (see lines 1-4, "Introduction") in optoelectronic devices. Since Okabe et. al. teach the spark processing in general for the devices (in lines 6-7, column 7), and having listed the substances in (lines 18-22, column 9) for such production, and St. John et. al. teach, in particular, fluorescents, as salts, for spark processing, the purpose disclosed by St. John et. al., i.e. the appealing linewidth, would have been recognized in the pertinent art of Okabe et. al.. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the salt for the purpose of strong luminescence.

Regarding claims 23-24, Okabe et. al. lacks the ***salt***. Specifically, regarding claim 23, Okabe et. al. lacks *the method according to claim 20, wherein the **salt** of a heavy ion is rare earth ion salt*. Such is taught by St. John as Er3+ ion is a *rare earth ion*, on p. 427 line 24. Specifically, regarding claim 24, Okabe et. al. lacks, *the method according to claim 20, wherein the **salt** of a heavy ion is a lanthanide ion salt*. Such is taught by St. John as Eu^3+ ion of $Eu(NO_3)_3 .H_2O$ (i.e. ***salt***) see line 3 "Experimental", Eu has atomic # '63'is within *Lanthanide* series elements (i.e. #'s 58-71), i.e. is *heavy*. Therefore regarding claims 23 and 24, it would have been obvious at the time the invention was made to a person having ordinary skill in the art

to provide the *salt* for the purpose of appealing enhanced linewidth of fluorescence, as taught by St. John et. al..

Regarding claim 26, Okabe et. al. teach, *the method according to claim 20, wherein introducing into the spark plasma a volatile liquid in which a salt of a heavy ion is dissolved during the production of the spark-processed silicon creates an aerosol of the volatile liquid in which a salt of a heavy ion is dissolved,* as discussed for claim 12 wherein it was pointed out that since there is a space between the medium 16 and the nozzle 63 as shown in Fig. 1 in which the volatile liquid (having particle suspended) *traverses*, in thus the locale of the aerosol, an aerosol can also be *liquid* particles in a gas, is thus also applicable to the volatile liquid in which a salt is dissolved therein. (see line 14, column 9 Okabe et. al.). There is no particle restriction as Okabe et. al. point out in line 13, column 9.. St. John et. al., teach deposition of the Eu3+ salt on the semiconductor surface by spark processing the salt would comprise an aerosol in the same process of spark processing, at the time of traverse. Since Okabe et. al. are St. John et. al. are all interested in making semiconductor device, the purpose disclosed by St. John et. al. would have been recognized in the pertinent art of Okabe et. al.. It would have been obvious at the time the invention was made to a person having ordinary skill in the art that the salt dissolved in the liquid would, as an aerosol, traverse the space from the nozzle orifice to the medium both in the spark processing of Okabe et. al. and in the spark processing of St. John et. al..

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okabe et. al. as applied to claim 1 above, in view of Sakaguchi et. al. USPN 6,316,062.

Regarding claim 11, Okabe et. al. teach, *the method according to claim 1, wherein the volatile liquid comprises acetone,* since Okabe et. al. teach organic liquids in general (line 63, column 7),

acetone being an organic liquid. Although acetone is not listed explicitly in Okabe et. al., Sakaguchi et. al. teach acetone (in line 53, column 13) employed in the coating of carbon. Since Okabe et. al. are Sakaguchi et. al. are all interested in coating a semiconductor device, the purpose disclosed by Sakaguchi et. al. would have been recognized in the pertinent art of Okabe et. al. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to consider other organics, such as acetone, in the production process.

Allowable Subject Matter

12. Claims 5-8 and 21-22 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter: Regarding claim 5: *The method according to claim 1, wherein SiO_2 particles are suspended in the volatile liquid*, the SiO_2 particles are suspended in the volatile liquid was not taught by the prior art. Regarding claim 6: *The method according to claim 5, wherein SiO_2 particles having a size in the range of about 0.2 um to about 20 um are suspended in the volatile liquid,* the SiO_2 particles having a size in the range of about 0.2 um to about 20 um are suspended in the volatile liquid was not found. Regarding claim 7: *The method according to claim 1, wherein Si_3N_4 particles are suspended in the volatile liquid,* the Si_3N_4 particles are suspended in the volatile liquid was not found. Regarding claim 8: *The method according to claim 7, wherein Si_3N_4 particles having a size in the range of about 0.2 um to about 20 um are suspended in the volatile liquid*, the Si_3N_4 particles having a size in the range of about 0.2 um to about 20 um are suspended in the volatile liquid was not found. Regarding claim 21, *the method according to*

claim 20, wherein the salt of a heavy ion is a transition metal salt, the *transition* salt dissolved was not found, hence the specific transition salt of manganese chloride, i.e. regarding claim 22, *the method according to claim 21, wherein the transition metal salt is manganese chloride*, was also not found. Regarding claim 25, *the method according to claim 24, wherein the lanthanide ion salt is selected from the group consisting of: cerium chloride, terbium chloride, and* ***europium*** *chloride*, the transition **europium** with the chloride was not found.

Conclusion

14. Pertinent art is Hummel, et. al. USPN 5,397,429 teaches spark plasma processing. And Hummel et. al. USPN 5,597,621 treats silicon with laser. Thornton et. al. USPN 5,256,339 who teach, a method for spark-processing silicon, comprising: applying to silicon sparks of sufficiently high voltage to effect the production of spark-processed silicon, wherein applying to the silicon sparks of sufficiently high voltage to effect the production of spark processed silicon creates a spark plasma, as target sample 1 of semiconductor material (lines 58-59, column 2) inclusive to silicon, high voltage power (line 63-64, column 2), spark gap fires (line 7, column 3) vaporizing to plasma (lines 58-59, column 2) the silicon, wherein, an introduction, (line 13, column 2) may be impurities "in the gas introduced into the plasma" or "in the gas through which the coalescing microparticles travel prior to deposition." (lines 14-16, column 2). However, while Thornton et. al. is explicit in introducing a gas having impurity, there is no suggestion of a volatile liquid with particles suspended. Thornton et. al. is absent of applicant's claim 1 lines 5-6: and introducing into the spark plasma a **volatile liquid in which particles are suspended**.

15. Other related art: Aratani et. al. USPN 5,244,639 teach the production of silicon by subjecting a stream of oxides of silicon (e.g. in an aerosol) in a furnace. Taniguchi et. al. USPN 5,275,967 teach an EL device consisting of a diamond-like carbon film. Aoki USPN 5,811,030 teaches a silicon colloid from vaporizing silicon particles and then solvent. Canham et. al. USPN 6,369,405 anodizes silicon using current. Bowers USPN 5,830,540 teaches reactive plasma surfacing. Hill USPGPUB 2004/014353 teaches rare earth and ligands for doped semiconductor powder for deposition. Coleman USPN 4,226,897 teaches the process and apparatus for glow discharge for coating a substrate with semiconductor material. Orlowski et. al. USPN 5,510,633 and USPN 5,552,328 teach porous silicon light emitting arrays. Kumoni et. al. implant ions for LED. Armstrong et. al. USPN 6,630,356 and USPN 6,780,649 shows testing apparatus, Fig. 1 for semiconductor luminescent materials. Stalmans et. al. USPN 6,683,367 increases efficiency of opto-electronic device with porous silicon. Arai et. al. PGPUB 2001/0018938 teaches rare earth element dissolved in Nitrogen. Sakaguchi et. al. USPGPUB 2002/0064606 and USPN 6,468,602 teaches carbon film from plasma CVD. Bertin et. al. USPN 4,772,498 and 4,861,533 teach capillary tool Fig. 7. using spark heat. Munir et. al. USPN 6,613,276 teach spark plasma sintering. Early USPN 5,756,924 teach Q-switched laser pulse for spark ignition of fuel aerosol. Matsuura et. al. USPN 5,720,917 teach silicon nitride powder pulsed plasma sintering. Kobayashi et. al. USPGPUB 2003/0151707 and USPN 6,512,562 teach protective film formation for polarizing plate using plasma treatment.

16. "Above-band-gap photoluminescence from Si fine particles with oxide shell," H. Morisak et al, J. Appl. Phys., 70, pp. 1869-1870(1991); teaches evaporation of Silicon powder for deposition to quartz.

17. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael K. Luhrs whose telephone number is 571-272-1874. The examiner can normally be reached on M-F, 8-5.

19. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard T. Elms can be reached on 571-272-1869. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MKL

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11/11/04

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